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DETERMINATION OF THE BOND DISSOCIATION ENERGY $D(t\text{-}C_4F_9\text{-}I)$

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The reactions

$$Br + R_aI \longrightarrow IBr + R_a \quad (1)$$

$$Br + R_bI \longrightarrow IBr + R_b \quad (2)$$

where R_a = $t\text{-}C_4F_9I$, R_b = $i\text{-}C_3F_7I$ or $n\text{-}C_3F_7I$, have been studied competitively in the gas phase over the temperature range 18-153°C. For reaction (1) we obtain log $A/cm^3\ mole^{-1}\ S^{-1}$ = 13.5, $E/kJ\ mole^{-1}$ = 24.8. Using the above activation energy $D(t\text{-}C_4F_9\text{-}I)$ was calculated to be 208.7 kJ mol^{-1}.